CLAIMS

1. A chemical heat pump comprising a vessel having an at least partly heat conducting wall or plate and a substance and a sorbate arranged in the vessel, the substance exothermally absorbing and endothermally desorbing the sorbate, **characterized** in that the substance is arranged on the inner surface as a layer and that a gas transport channel is arranged at an outer surface of the layer which is opposite said inner surface, the layer being configured in such a way that heat conduction through the layer and transport of vapour of the volatile liquid in the layer have substantially the same direction and/or substantially perpendicularly to the gas transport channel and/or to the inner surface.

2. A chemical heat pump according to claim 1, **characterized in** that the layer has a substantially constant thickness, the thickness being selected so that the sorbate is capable of interacting from the outer surface with all parts of the layer.

3. A chemical heat pump according to claim 1, **characterized in** that in the layer substantially parallel slot-shaped channels are provided having directions perpendicular to the inner surface in order to allow that the sorbate penetrates in the channels to interact with substance in the layer.

4. A chemical heat pump according to claim 1, **characterized in** that heat conducting thin or narrow material, in particular thread-shaped or plate-shaped heat conducting material, which is attached to the heat conducting wall, penetrates in the layer.

5. A chemical heat pump according to claim 4, **characterized in** that the heat conducting thin or narrow material extends substantially perpendicularly to the inner surface.

6. A chemical heat pump according to claim 1, **characterized in** that the substance is solid and the sorbate is water, which substance has a temperature difference ΔT of substantially 20 - 40°C for a pressure equilibrium between the substance and water within a temperature range of substantially 0 - 100°C.

7. A chemical heat pump according to claim 6, **characterized in** that the substance has an energy content counted as energy of evaporation comprising at least 0.15 kWh/l of the substance, preferably at least 0.20 kWh/l of the substance.

8. A chemical heat pump according to claim 6, **characterized in** that the substance comprises a substance selected among $CoCl_2$, $Ba(OH)_2$, LiOH and $SrBr_2$.

9. A chemical heat pump according to claim 1, **characterized in** that the layer is a dried slurry-like mixture of the substance and an excess of the volatile liquid, from which slurry-like mixture at least the excess of the volatile liquid has been removed.

10. A chemical heat pump comprising an active solid substance and a volatile liquid which is absorbed and desorbed by the solid substance, **characterized in** that as active solid substance a substance is used which has a temperature difference ΔT of substantially 20 - 40°C for a pressure equilibrium between active solid substance and the volatile liquid within a temperature range of substantially 0 - 100°C for the chemical heat pump.

11. A chemical heat pump according to claim 10, **characterized in** that the active solid

substance within the temperature range reacts with the gaseous phase of the volatile liquid in at least two phase transitions having ΔT:s located close to each other.

12. A chemical heat pump according to claim 10, **characterized in** that the active solid substance has an energy content counted as energy of evaporation comprising at least 0.15 kWh/l of the active solid substance, preferably at least 0.20 kWh/l of the active solid substance.

13. A chemical heat pump according to claim 10, **characterized in** that the active substance comprises a substance selected among $CoCl_2$, $Ba(OH)_2$, LiOH and $SrBr_2$.

14. A chemical heat pump according to claim 10, **characterized in** that the volatile liquid is water.

15. A chemical heat pump according to claim 10, **characterized in** that the active solid substance exists in a porous state.

16. A chemical heat pump according to claim 10, **characterized in** that the active solid substance is in a porous state having a volume porosity of at least 15%, preferably 35%, in relation to the active solid substance in a completely compressed state or in a crystal state.

17. A chemical heat pump according to claim 10, **characterized by** an at least partly heat conducting wall or plate having an inner surface, the active solid substance being applied to the inner surface and being a dried slurry-like mixture of the substance with an excess of the volatile liquid, from which at least the excess of the volatile liquid has been removed.

18. A chemical heat pump according to claim 10, **characterized by** an at least partly heat conducting wall or plate having an inner surface, the substance being arranged on the inner surface as a layer and a gas transport channel being arranged at a surface of the layer which is not located at said inner surface, the layer being configured in such a way that heat conduction through the layer and transport of vapour of the volatile liquid in the layer have substantially the same direction, substantially perpendicularly to the gas transport channel and/or to the inner surface.

19. A chemical heat pump according to claim 10, **characterized by** an at least partly heat conducting wall having an inner surface, the substance being arranged on the inner surface as a layer having a substantially constant thickness and having an outer surface opposite said inner surface, the layer having such a thickness and/or such a configuration that the volatile liquid is capable of interacting from the outer surface with all parts of the substance.

20. A method of producing a heat accumulator, the heat accumulator comprising a vessel, an at least partly heat conducting wall arranged in the vessel and having an inner surface, a substance and a sorbate arranged in the vessel, the substance exothermally absorbing and endothermally absorbing the sorbate, **characterized by** preparing a slurry-like mixture of the substance with an excess of the sorbate, applying the slurry-like mixture to the inner surface and drying the applied slurry-like mixture to remove at least the excess of sorbate.

21. A method according to claim 20, **characterized in** that the drying of the slurry-like mixture is performed by applying the slurry-like mixture in a closed space from which gas is evacuated.

22. A method according to claim 20, **characterized in** that in drying the slurry-like mixture simultaneously a gradual heating of the slurry-like mixture is made.

23. A method according to claim 20, **characterized in** that in drying the slurry-like mixture pressure forces are applied to the slurry-like mixture to compress the slurry-like mixture.

24. A method according to claim 20, **characterized in** that in applying the slurry-like mixture at the same time a vibration of the slurry-like mixture is made.

25. A heat accumulator comprising a vessel having an at least partly heat conducting wall, which vessel contains a substance which exothermally absorbs and endothermally desorbs a sorbate, **characterized in** that the substance is arranged on the at least partly heat conducting wall as a layer having a substantially constant thickness and having an exterior surface, which layer has such a thickness that the sorbate is capable of interacting from the outer surface with all parts of the substance.

26. A heat accumulator according to claim 25, **characterized in** that the layer has a thickness of at most 10 mm.

27. A heat accumulator according to claim 25, **characterized in** that the substance in the layer exists in a porous state.

28. A heat accumulator according to claim 25, **characterized in** that the substance in the layer exists in a porous state having a volume porosity of at least 15%, preferably 35%, in relation to the active solid substance in a completely compressed state or in crystal state.

29. A heat accumulator according to claim 25, **characterized in** that in the layer substantially parallel slot-shaped channels are provided having directions perpendicular to the heat conducting wall in order to allow that the sorbate penetrates in the channels to interact with the substance.

30. A heat accumulator according to claim 25, **characterized in** that heat conducting thin or narrow material, in particular thread-shaped or plate-shaped heat conducting material, which is attached to the heat conducting wall, penetrates in the layer.

31. A heat accumulator according to claim 30, **characterized in** that the heat conducting thin or narrow material is located substantially perpendicularly to the surface of the heat conducting wall.